

Short communication

Epidemiology of animal bites in Rafsanjan, southeast of Islamic Republic of Iran, 2003–05

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وبائيات عضات الحيوانات في رفسنجان، جنوب شرق جمهورية إيران الإسلامية. 2005 – 2003
نازين ضياء شيخ الإسلامي، محسن رضائیان، زينت سالم

الخلاصة: تزايد معدّل حدوث عضات الحيوانات في جمهورية إيران الإسلامية في السنوات الحالية. وقد أجرى الباحثون هذه الدراسة الوصفية التي شملت 1542 مريضاً حولوا إلى مركز صحي في مدينة رفسنجان في المدة بين عامي 2003 و2005. وقد قدر معدّل حدوث عضات الحيوانات في عام 2003 بـ 180 لكل مئة ألف و195 عضّة لكل مئة ألف في عام 2004 و241 عضّة لكل مئة ألف عام 2005. وقد تعرّض 74٪ من هؤلاء المرضى لعرض الكلاب و23٪ لعرض القطط و3٪ لعرض حيوانات أخرى (القرودة والجرذان والثعالب والخفافيش والحمير وغيرها). وبلغ وسطي زمن التأخر في بدء المعالجة بعد الإصابة 15.1 ساعة (الانحراف المعياري 29.8). وقد أعطي اللقاح المضاد للكلب لـ 85٪ من الحالات، واللقاح المضاد للكلب مع الغلوبولين المناعي لـ 15٪ ولقاح ذوفان الكزاز لـ 66٪ منها.

ABSTRACT The incidence of animal bites in the Islamic Republic of Iran has been increasing in recent years. In a descriptive study of 1542 patients referred to a health centre in Rafsanjan city from 2003 to 2005, the incidence of animal bites in the area was estimated as 180, 195 and 241 per 100 000 in 2003, 2004 and 2005 respectively. Of the patients, 74% were bitten by dogs, 23% by cats and 3% by other animals (monkeys, rats, foxes, bats, donkeys, etc.). The mean time delay from injury to initial management was 15.1 (SD 29.8) hours. Rabies vaccine was given to 85% of cases, rabies vaccine plus rabies immunoglobulin to 15% and tetanus toxoid vaccine to 66%.

Épidémiologie des morsures d'animaux à Rafsanjan (sud-est de la République islamique d'Iran) en 2003-2005

RÉSUMÉ L'incidence des morsures d'animaux en République islamique d'Iran est en augmentation depuis quelques années. Dans une étude descriptive portant sur 1 542 sujets dirigés vers un centre de santé de Rafsanjan entre 2003 et 2005, on a estimé l'incidence des morsures d'animaux dans la région respectivement à 180, 195 et 241 pour 100 000 en 2003, 2004 et 2005. Sur l'ensemble des sujets, 74 % avaient été mordus par des chiens, 23 % par des chats et 3 % par d'autres animaux (singes, rats, renards, chauves-souris, ânes, etc.). La durée moyenne entre la blessure et la prise en charge initiale était de 15,1 (E.T. 29,8) heures. Le vaccin antirabique a été administré à 85 % des sujets, associé pour 15 % d'entre eux à de l'immunoglobuline antirabique et pour 66 % à de l'anatoxine tétanique.

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Introduction

The incidence of animal bites in the Islamic Republic of Iran has been increasing in recent years [1]. Rafsanjan is a city in Kerman province in the south-east of the country which has many surrounding rural areas and has a population of around 250 000. This study reports the epidemiological profile of animal bites in Rafsanjan.

Methods

This descriptive study included a total of 1542 patients over a 3-year period 2003–05. Anyone who was bitten in any part of the area and referred to Rafsanjan health centre was the subject of the study. A questionnaire was completed by expert health care workers for each case.

Data were analysed using *SPSS* software, version 14, applying chi-squared and Student *t*-tests.

Results

There were 451 patients bitten in 2003 (84% males and 16% females), 488 in 2004 (86% males and 14% females), and 603 in 2005 (87% males and 13% females). The incidence of animal bites in Rafsanjan was estimated as 180 per 100 000, 195 per 100 000 and 241 per 100 000 in 2003, 2004 and 2005 respectively.

Of all the patients, 1310 (85%) were men and 277 (18%) were children. The mean age and standard deviation (SD) was 27.0 (SD 17.1) years. The mean age in men was 26.6 (SD 16.3) years and in women 31.2 (SD 20.6) years ($P > 0.05$).

Of all patients, 74% were bitten by dogs, 23% by cats and 3% by other animals (monkeys, rats, foxes, bats, donkeys, etc.). The animals were domestic in 77% of cases, wild in 3% and stray animals in 20%.

Examining the relation between area of residence and accident area, 45% of cases were bitten in urban areas while 55% were bitten in rural areas. Furthermore, 6% of people who lived in urban areas were bitten in rural areas while 3% of rural residents was bitten in urban areas ($P = 0.001$).

Regarding the site of injury, 48% were to the hand, 34% the foot, 5% the head, 4% the trunk and the rest were mixed sites of injury. Overall, 15% of cases had deep injuries, 70% had superficial injuries, 9% had deep plus superficial injuries and the extent of injury was unknown for the rest of the cases. The proportion of deep injuries in men was higher than in women (91% of males and 9% of females) ($P = 0.018$).

The mean time delay from injury to initial management for both sexes was 15.1 (SD 29.8) hours. The mean delay for women was 11.6 (SD 29.6) hours and for men was 10.4 (SD 29.8) hours ($P > 0.05$).

Finally, 85% of cases received rabies vaccine, 15% received rabies vaccine plus rabies immunoglobulin and 66% received tetanus toxoid vaccine.

Discussion

The incidence of animal bites in different parts of the Islamic Republic of Iran has increased from 35.1 per 100 000 in 1987 to 151 per 100 000 in 2001 [1]. For instance, a report from Zanzan in north-west Islamic Republic of Iran showed that the incidence of animal bites increased from 56 per 100 000 in 1994 to 194 per 100 000 in 2004 [2]. Another report from Khorasan in the north of Islamic Republic of Iran also showed that the incidence of animal bites increased from 108 per 100 000 in 2002 to 126 per 100 000 in 2004 [3]. The same situation has been reported from Gazvin, Tehran and Kerman provinces [4]. In our study the incidence of animal bites in the Rafsanjan

area was estimated as 180 per 100 000, 195 per 100 000 and 241 per 100 000 in 2003, 2004 and 2005 respectively.

In developing countries where canine rabies is common, most human cases result from dog bites, whereas in countries that domestic animals are vaccinated, most human cases follow exposure to rabid wild animals [5]. A recent study within the United States revealed that the number of human and canine rabies cases in the region fell by approximately 80% because of the mass vaccination of dogs and prophylactic treatments and as a result human rabies has been transmitted by wildlife, mostly by bats [6].

However, in our study 77% of cases were bitten by domestic animals mostly by dogs (74%). The same situation has also been reported in Uganda [7] and Romania [8].

It seems that prevention strategies should focus on vaccination of all domestic animals, public education to avoid confronting wild and stray animals and advice to refer an injured person to health centres as soon as possible. Population control of stray animals, especially dogs, is an important strategy which needs cooperation among different sectors including the health, municipal and police forces.

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